Updated USGS Aftershock Advisory for the Magnitude 7.8 Gorkha earthquake in Nepal April 25, 2015; *Special Report due to Magnitude 7.3 aftershock on May 12, 2015* (as of May 13, 2015)

Aftershocks are earthquakes that occur following a large earthquake, in the same general area as the earthquakes and during the following days-to-years. Both the magnitude 7.8 Gorkha mainshock and the subsequent May 12 magnitude 7.3 aftershock, have triggered aftershocks. Aftershocks have the potential to create damage, just like other earthquakes.

The aftershocks are a normal occurrence after large earthquakes, and are expected to continue in Nepal but occur less often with time. **The probability of future aftershocks is higher than in our forecast of May 8 due to the magnitude 7.3 earthquake on May 12, 2015, which was itself an aftershock of the Gorkha mainshock.**

There is no way to predict the exact date or time of an earthquake or aftershock. The USGS produces a statistical analysis of the expected number or probability of aftershocks, in a given time period, based on past earthquakes and the aftershocks recorded in Nepal.

While the magnitude 7.3 earthquake on May 12, 2015 was a low probability event for this week, it is within the area of the ongoing aftershocks and so can reasonably be considered as part of the aftershock sequence. Such large aftershocks are not common but do occur during some earthquake sequences.

As is normal, there will continue to be many, felt aftershocks that do little or no damage. Some aftershocks may be strong enough to be felt widely throughout the area and may cause additional damage, particularly to vulnerable structures and those already weakened by the mainshock and the aftershocks. **Although aftershocks may occur less often, people should remain aware of the possibility of aftershocks in the coming weeks and months, especially when working in or around vulnerable structures or in landslide-prone areas.**

- Within the week of May 13 to May 19, the USGS estimates that the chance of at least one magnitude 5 to 6 aftershock is about 80% and 0 to 4 such events may occur.
- A magnitude 6 to 7 earthquake has a probability of 15% or a 1-in-6 chance of occurring within this week. A magnitude 7 to 7.8 aftershock is possible, but less likely with about a 1-in-100 chance of occurring; meaning that there is a 99% chance such an earthquake will not occur within this week.
- The potential for an aftershock larger than the mainshock remains, but is even lower with about a 1-in-300 chance. This means that there is a 99.7% chance that an aftershock larger than the mainshock will not occur within the coming week. If an earthquake larger than the mainshock does occur, the USGS expects that it would most likely be about the size of the mainshock.
- Larger magnitude earthquakes have lower probabilities but larger consequences than smaller magnitude earthquakes. In making decisions based on the aftershock statistics, it is important to consider both the probability that an earthquake may happen and the potential consequences if it does happen.
- In comparison, prior to the recent M7.8 mainshock, this region has experienced about 1 magnitude 5 or greater earthquake per year over the last 20 years; due to the aftershock sequence the rate of earthquakes is currently higher than that.

The expected location of the aftershocks will be in the zone of current activity and at its edges with a few located further away.

This information is preliminary and subject to change as more data becomes available. The USGS will update this analysis for future time periods on or before May 20, 2015.

Technical details and analyses of longer time windows are available at http://earthquake.usgs.gov/earthquakes/eventproducts/us20002926/aftershock-statistics.pdf

For more information on the Gorkha earthquake, including updates to this advisory visit: http://earthquake.usgs.gov/earthquakes/eventpage/us20002926

Or, to get the most recent advisory directly, use: http://earthquake.usgs.gov/earthquakes/eventproducts/us20002926/aftershock-advisory.pdf